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THE BRYOLOGIST

VOL. XV

MAY 1912

No. 3

ABNORMALITY IN MOSS LEAVES

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Two cases of abnormality in the leaves of mosses, which have come under my notice of late, are described in this note.

The first is a bifid leaf of *Campylopus flexuosus*. This has no doubt been produced by an accidental injury to or interference with the growing point of the leaf. That it arose at a very early stage in the development of the leaf is evident from the fact that it is not simply a bifurcation of the nerve after the leaf had developed its normal tissues. In that case there would be no development of the lamina between the forkings, but only on the exterior sides of the nerve. As a matter of fact the lamina extends down each side of both branches, reaching internally almost to the point of bifurcation. The two halves are approximately equal, so that it appears to be actually a case of forking, not of an outgrowth or branching from the nerve.

Somewhat similar results have been obtained artificially in the leaves of mosses, e. g. *Mnium* (cf. V. Schoenau, Zur Verzweigung der Laubmoose; Hedwigia 51: Heft ½. 1911).

The second is, I think, a much more unusual and less easily explained structure. It occurs in a leaf of *Tortula muralis*, gathered near Northampton, and consists of a transformation of tissue in such a way as to form a structure comparable to a fragmentary adventitious nerve. In the middle of one side of the lamina, a little above the base, a certain number of the normal quadrate-hexagonal and rectangular, parenchymatous cells have been replaced by long narrow, mostly prosenchymatous cells, of a very similar nature to those of which the true nerve is composed, being elongate, of a deep brown color, more or less stereid, and without chlorophyll. Whether they form more than a single layer it is not quite easy to determine (the leaf forms part of a permanent microscopic mount), but in all probability at certain points they constitute at least a double layer. The opposite half of the leaf lamina is quite normal.

The accompanying figures will give some idea of the structure, FIG. *c* showing how at the base of the "adventitious nerve" the abnormal cells pass into the normal parenchymatous tissue.

I am unable to suggest any cause for the origin of this structure.

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Explanation of PLATE I. *a*. Leaf of *Tortula muralis* with fragmentary adventitious nerve. *b*. Portion of the same highly magnified. *c*. A portion of the same showing how the normal cells pass over into the abnormal. *d*. Bifid leaf of *Campylopus flexuosus*. *e*. One of the twin apices magnified.

The March BRYOLOGIST was issued March 9, 1912.

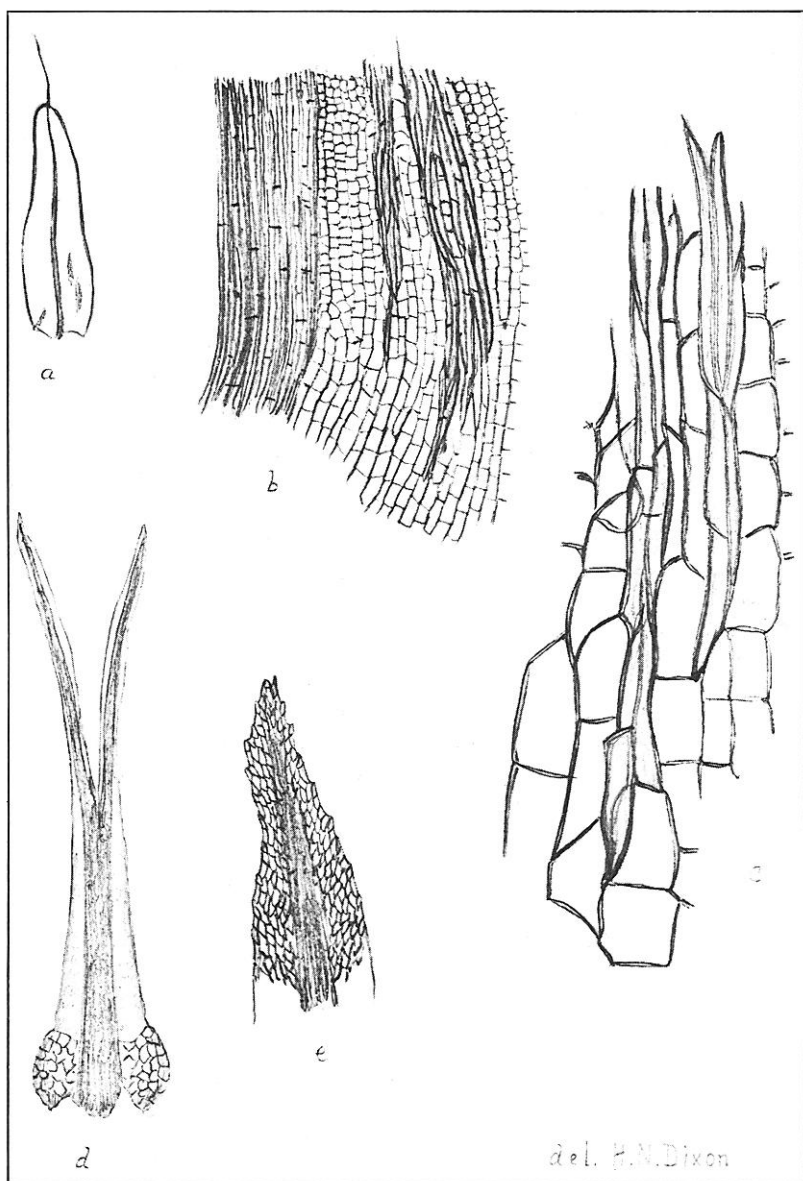


PLATE I